



## PSL/44 VISUAL ACUITY AND COLOUR PERCEPTION – GUIDANCE DOCUMENT Issue 19 Dated 1<sup>st</sup> April 2021

This document is issued as guidance to PCN examination candidates, PCN certificate holders and Authorised qualifying Bodies conducting examinations on behalf of BINDT (PCN).

It is a requirement of ISO9712:2012 that all examination candidates and holders of PCN certification meet the minimum requirements for visual acuity and colour perception as stated in ISO 9712:2012 (extracts in italics below)

**5.5.3** *In respect of certified personnel under their control the employer shall be responsible for:*

*d) ensuring that the annual visual acuity requirements of 7.4 a) are met;*

### **7.4 Vision requirements – all levels**

*The candidate shall provide documentary evidence of satisfactory vision in accordance with the following requirements:*

*a) near vision acuity shall permit reading a minimum of Jaeger number 1 or Times Roman N 4.5 or equivalent letters (having a height of 1,6 mm) at not less than 30 cm with one or both eyes, either corrected or uncorrected;*

*b) colour vision shall be sufficient that the candidate can distinguish and differentiate contrast between the colours or shades of grey used in the NDT method concerned, as specified by the employer. The certification body may consider replacing the requirements in a) by compliance with an appropriate alternative. Subsequent to certification, the tests of near visual acuity shall be carried out annually and verified by the employer.*

Candidates and employers should make themselves aware of their responsibilities with regard to visual acuity and colour perception testing. The responsibility remains with the employer.

With regard to PCN examination candidates BINDT advises AQB's that a current VA/CP certificate or documented attestation by the employer is deemed as acceptable documentary evidence of satisfactory vision in accordance with ISO 9712 requirements. Documented employer attestation may be in the form of a compliant statement. However the employer should retain the results of visual acuity and colour perception tests as they may be required to provide evidence of testing when requested by BINDT and/or a client.

The Authorised Qualifying Body (AQB) may at their discretion conduct a suitable VA/CP test prior to examination. This test shall be to satisfy the AQB that the candidate possesses an acceptable level of VA/CP and does not absolve the employer of their responsibilities under the Governing Standard. The AQB is required to retain records of any VA/CP tests it conducts. An example form for recording tests conducted by the AQB is attached at Annex A. The AQB may use alternative recording methods at their discretion.

PCN will recognise the Tumbling E Chart as a satisfactory alternative near vision test as permitted by ISO9712:2012 clause 7.4. BS EN ISO 18490 (Non -destructive testing — Evaluation of vision acuity of NDT personnel) is the Governing standard for tumbling "E" testing.

*Note: The new version of ISO9712 (anticipated during 2020) is scheduled to mandate BS EN ISO 18490 as the Governing standard for visual acuity testing. At such time the PCN requirements will change and this Guidance document amended accordingly.*

Tumbling "E" test charts are available at <http://www.eminspection.co.uk/visiontests/>

Laminated hand held vision test charts are available from a number of suppliers, including the Institute of Optometry\*. \*<http://www.ioosales.co.uk/html/practice/eye06B.html>

All candidates and holders of PCN certification are required to have colour perception that allows them to distinguish between the colours associated with the relevant NDT method. The decision regarding the test method designed to meet this requirement remains with the employer.

BINDT recommends the use of the Ishihara 24 plate test as the base test. For Radiography methods a supplemental grey scale test is recommended.

In the event that a colour perception deficiency, indicated by misreading any of the first 17 plates, is detected during the Ishihara test, a further 'trade test' is required to be carried out by the employer to ascertain whether the detected colour perception deficiency affects the individual's ability to perform the NDT for which he/she is certificated. This trade test is to be documented and the record of the test made available to BINDT upon request.

The employer must also consider new medical issues that may arise that may require candidates or certificate holders to undergo further VA/CP tests as some medical conditions such as diabetes or a major medical condition can affect both near vision and colour perception.

Following certification, ISO 9712 mandates that the employer is responsible for ensuring that the tests of visual acuity are carried out at least annually. Records of tests shall be retained by the employer or responsible agency and provided to PCN upon request. Failure to do so will invalidate all PCN certification.

The Colour Perception test is required every five years (as a minimum).

BINDT accepts that a \*nominated official of an Authorised Qualifying Body, a PCN Level 3 certificate holder or a medical professional, having documented proof of satisfactory training in the administration of the test, and is recognised as competent may conduct such tests for candidates and holders of PCN certification.

*\*nominated officials must provide proof of appropriate training upon request by BINDT.*

**ANNEX A:  
RECORD OF VISION TEST**

Name of individual tested:		PCN number:	
Employer:			
Address:			
Telephone:		Email:	
<b>RESULT OF NEAR VISION TEST</b> (record the smallest text capable of being read).			
CORRECTED		UNCORRECTED	
<b>OPTION 1:</b> Times Roman N: _____, or		<b>OPTION 1:</b> Times Roman N: _____, or	
<b>OPTION 2:</b> Jaeger number: _____		<b>OPTION 2:</b> Jaeger number: _____	
<b>OPTION 3: RESULT OF NEAR VISION TEST – Tumbling E Option</b> (candidates should correctly identify 5 out of 5 on each line, and lines 1-9)			
CORRECTED		UNCORRECTED	
Line 1 Pass/Fail Line 2 Pass/Fail Line 3 Pass/Fail Line 4 Pass/Fail Line 5 Pass/Fail Line 6 Pass/Fail Line 7 Pass/Fail Line 8 Pass/Fail Line 9 Pass/Fail	Line 1 Pass/Fail Line 2 Pass/Fail Line 3 Pass/Fail Line 4 Pass/Fail Line 5 Pass/Fail Line 6 Pass/Fail Line 7 Pass/Fail Line 8 Pass/Fail Line 9 Pass/Fail		
<b>RESULT OF ISHIHARA COLOUR VISION TEST</b> Record the Ishihara test results, and indicate if an alternative (trade) test is suggested.			
Please tick the box of the Ishihara plate edition tested: <i>Failure to record this will result in vision test being rejected</i>  <input type="checkbox"/> 17 plates <input type="checkbox"/> 24 plates <input type="checkbox"/> 38 plates (MINIMUM OF FIRST 17)	Record of Ishihara plates failed. Please tick the appropriate box as below:  <input type="checkbox"/> Plates tested passed with no errors <input type="checkbox"/> Plates tested failed, see attached trade test		
<b>RESULT OF GREY SCALE TEST</b>			
Which grey scale test was used?	Number of correct readings given for Dr Kolbl ONE/TUV/BV Eye Examination (20 minimum)  <b>Pass/Fail</b> (delete as appropriate)  The Skerik grey scale test: - Contrast modification – It is required that the contrast of 2% and above shall be clearly discriminated on pattern while contrast of less than 1% shall not be visible.  <b>Pass/Fail</b> (delete as appropriate)		

### COLOUR VISION TRADE TEST

Name of individual tested:		PCN number:	
Employer:			
Address:			
Telephone:		Email:	
<b>RESULT OF COLOUR VISION TRADE TEST (WHERE REQUIRED SEE ABOVE)</b>			
The employer should state the NDT methods and associated colours used by the employee:			
NDT METHOD	ASSOCIATED COLOURS	COLOUR DIFFERENTIATION	CONTRAST DETECTION
<b>RESULT OF OPTIONAL FAR VISION TEST</b>			
<b>CORRECTED</b>		<b>UNCORRECTED</b>	
Corrected far vision acuity shall have a minimum value of 0.8 (or imperial measurement 6/7.5 i.e. the candidate will be able to read the characters on the line marked 7.5 M-units at a distance of 6 metres).		Uncorrected far vision acuity shall have a minimum value of 0.8 (or imperial measurement 6/7.5 i.e. the candidate will be able to read the characters on the line marked 7.5 M-units at a distance of 6 metres).	
<b>Pass/Fail</b> (delete as appropriate)		<b>Pass/Fail</b> (delete as appropriate)	
<b>DETAILS OF PERSON CARRYING OUT AND RECORDING ANY OF THE ABOVE TESTS</b>			
Signature:		Name of tester:	
		Date of test:	
		Expiry date of test: <b>(note: maximum 12 months from date of test but may be prior to that)</b>	
Organisation and telephone number (please use official stamp if available):			

## SUMMARY OF CHANGES

Issue	Issue date	Summary of changes
18	1 <sup>st</sup> July 2020	<ul style="list-style-type: none"><li>• Overall the document has changed to enforce the employer's responsibility</li><li>• Document title changed FROM Vision requirements to Visual Acuity and Colour Perception Guidance document</li><li>• Direct clause references to ISO 9712</li></ul>
19	1 <sup>st</sup> April 2021	<ul style="list-style-type: none"><li>• Minor grammatical changes (highlighted in text) to better clarify intent</li></ul>